

# Examining Primary Healthcare Performance through a Triple Aim Lens

## Examen du rendement des soins de santé primaires sous la lentille du triple objectif

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### Appendix 1 – Definitions of Variables

#### 1. Triple Aim Component Dimensions Definitions

Component Dimension	Source	Definition
<b>Health</b>		
Cancer screening*	Health administrative data	<p>The percentage of eligible patients receiving screening for three types of cancer – colorectal, cervical and breast. This dimension was calculated as the mean of three percentages provided by ICES for 1) Papanicolaou testing (Pap), 2) mammography, 3) FOBT/colonoscopy screening. Higher percentages indicated higher rates of screening.</p> <p>1) Pap for women aged 20–69 in the previous three years, measured through a validated algorithm that included laboratory and physician claims (Lofters et al. 2010); 2) mammogram in the past two years, measured using radiology claims for mammography and the Ontario Breast Screening Program; and 3) fecal occult blood testing (FOBT) in the past two years, measured through laboratory claims, other investigations (barium enema, sigmoidoscopy) through radiology and physician claims, colonoscopy within the previous 10 years through physician claims.</p>
Diabetes care*	Health administrative data	<p>The percentage of patients receiving five components of quality diabetes care – 1) HbA1c tests, 2) eye examination, 3) cholesterol test, 4) prescription for angiotensin converting enzyme (ACE) inhibitors or angiotensin renin blocker (ARB), and 5) prescription for statins. This dimension was calculated as the mean of the five percentages as provided by ICES. Higher percentages indicated higher levels of appropriate diabetes care.</p> <p>1) At least two HbA1c tests within the previous 12 months; 2) eye exam with an ophthalmologist or optometrist within the previous 24 months; 3) at least one cholesterol test within the previous 12 months; and for those aged 66 years and older filling a prescription drug claim through the Ontario Drug Benefit Program for 4) an ACE inhibitor, ARB or 5) statin within the previous 12 months.</p>

Component Dimension	Source	Definition
<b>Experience of Care</b>		
Patient-centredness	Patient survey	The score from 1 to 4 on 14-item Patient Perception of Patient-Centredness (PPPC) which assessed how patient-centred the care was that the patient received at a specific visit. Three patient-centred components were measured: Exploring Disease and Illness, Understanding the Whole Person and Finding Common Ground. Scores were calculated by summing items and dividing by number of items completed (minimum 7 items must be completed). Lower scores indicate higher provider patient-centredness.
After-hours access	Patient survey	The percentage of respondents who had found it very easy or easy to get access after hours; calculated by summing the percentages for first two response categories "Very easy" and "Easy" and dividing by the number of respondents indicating they had needed services after hours. Higher percentages indicated better access.  Based on the question: <i>Last time when you needed medical care in the evening, on a weekend or on a holiday, how easy or difficult was it to get care without going to the emergency department? Was it ...?</i> The response categories were: Very easy, Easy, Somewhat difficult, Very difficult, Never needed care in the evening, weekends or holidays.
Timely access	Patient survey	The percentage of respondents who had received an appointment the same day or the next day after requesting one; calculated by summing the percentages for first two response categories 'Same day appointment' and 'Next day appointment' and dividing by the number of respondents indicating they had tried to obtain an appointment. Higher percentages indicated better access.  Based on the question: <i>Last time you were sick, how quickly could you get to see a doctor or nurse? Was it ...?</i> The response categories were: On the same day, The next day, In 2 to 3 days, In 4 to 5 days, In 6 to 7 days, After more than a week, Never able to get an appointment/consultation, Not sure.
<b>Cost</b>		
Physician visits and capitation costs*	Health administrative data	Costs per patient were calculated according to the costing algorithm developed by ICES. Costs for each healthcare sector were calculated according to charges and costs in that sector. In the ambulatory sector, actual payments were used including regular OHIP (Ontario Health Insurance Plan) billings, capitation payments and shadow billings. Lower costs were considered desirable.
ED visit costs*		
In-patient hospital costs*		
Low-urgency ED visits*	Health administrative data	The rate of low-urgency ED visits per 100 patients defined as CTAS 4 (less urgent) and CTAS 5 (non-urgent). Lower rates were considered desirable.  ED visits measured using the National Ambulatory Care Reporting System (NACRS) database. Triage level was measured using the Canadian Triage and Acuity Scale (CTAS), where CTAS level 1 was Resuscitation, CTAS 2 emergent, CTAS 3 urgent, CTAS 4 less urgent and CTAS 5 non urgent (Bullard et al. 2008).
Potentially avoidable hospitalizations*	Health administrative data	The rate of potentially avoidable hospitalizations per 10,000 population; defined as hospitalizations with a most responsible diagnosis of asthma, congestive heart failure, chronic obstructive pulmonary disease or diabetes mellitus. Lower rates were considered desirable.

\*As health administrative data from ICES are expected to vary according to practice demographics and case mix, these dimensions were adjusted using Poisson regression models to adjust for age, sex, morbidity (using RUB), income quintile and rurality. The adjusted rates were calculated as the crude rates for a class divided by the predicted rates for that class multiplied by the overall crude rates.

## 2. Definitions of Variables used to Adjust Healthcare Outcomes and Costs in the Health Administrative Database

Variable	Source	Definition
<b>Demographic:</b> Age, sex, date of birth and area of residence	Health administrative data	Derived from the Registered Persons Database, Ontario's healthcare registry.
<b>Geographic location:</b> Urban or rural	Health administrative data	Urban-rural location was assigned using the Rurality Index of Ontario (Kralj 2009), with 0–9 indicating major urban centres, 10–44 non-major urban centres and ≥45 rural areas.
<b>Income level</b>	Health administrative data	Income level for household size, and specific to each community, was used to order postal codes into quintiles, with income quintile 1 having the lowest relative income and income quintile 5 the highest.  Income quintile was derived using Statistics Canada's Postal Code Conversion file (Statistics Canada 2014) to assign postal codes of residents to census dissemination areas in the 2006 census.
<b>Morbidity</b>	Health administrative data	Two years of diagnostic data from physician claims and hospital discharges were used to assign Ontario residents to a Resource Utilization Band (RUB) using the Johns Hopkins Adjusted Clinical Groups System (Johns Hopkins University 2014). RUBs are quintiles of expected resource use and therefore are measures of overall morbidity and expected costs. RUB 0 is comprised of non-users of the health system, RUB 1 is the quintile with the least expected use and RUB 5 is the quintile with the highest expected use.

### References

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